

Abstract of the Disclosure

Methods for decreasing non-specific bindings of beads in dual bead assays and related optical bio-discs and disc drive systems. The methods are employed to
5 determine the suitability of a test solid phase for use in a dual bead assay. The methods include identifying whether a target agent is present in a biological sample and involve mixing capture beads, each having at least one transport probe affixed thereto. Reporter beads each have at least one signal probe affixed thereto. The reporter and capture beads are each bound to the target agent. The methods
10 further include isolating the dual bead complex from the mixture to obtain an isolate, and exposing the isolate to a capture field on a disc. Detecting the presence of the dual bead complex in the disc is then performed to determine whether the target agent is present in the sample. The method further includes pre-treating capture beads and reporter beads with detergents prior to capture, treating capture beads
15 and reporter beads with blocking agents prior to target capture, and performing the mixing in an intermittent manner. The beads are preferably mixed only when they start to settle down in the tube or on the disc. The methods also provide for evaluation of non-specific binding of the dual bead assay in the presence of salt concentrations ranging from 0.1M up to 1M and use of a new wash buffer having
20 10mM EDTA.

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